**Final TIPS Assignment – Electrostatics Review**

Instructions: *Each question refers to a question on the Electrostatics Test. You will need to refer to your test to understand what these questions are asking. Answer and hand in on Monday for an additional TIPS mark. This is completely optional.*

***To discourage plagiarism, answers need to be handwritten!***

1. Explain three steps needed to get the answer. Use words only, no formulae, numbers or calculations. Fourth step: Explain how you know the direction of the net force on A.
2. At a grocery store, apples are selling for $0.75/lb. What does this mean: it means for every \_\_\_\_\_\_\_\_ of apples you buy, you will pay \_\_\_\_\_\_\_\_\_\_\_. The answer to question 2a) was 4.8x107 N/C. Now answer question 2b) from your test.
3. Explain the steps needed to get the answer. Use lots of words, explain every detail. You may include formulae, but don’t include numbers or calculations.
4. Explain the steps needed to get the answer. Use lots of words. Explain every detail. You may include formulae, but don’t include numbers or calculations. Why can you not use Electric field = kQ/r2 in this case? If you did, what would this formula give you?
5. Why can you not use Voltage = kQ/r in this case? If you did, what would this formula give you?
6. Initially, what formula would you *expect* to use to calculate the force on the pith ball? Why can you not use this formula? What basic formula can you use instead (hint: this formula has nothing to do with electrostatics). Anytime you see a question in which an object is “suspended” or otherwise balanced by a number of competing forces, this formula becomes useful. Why?
7. What is the most likely mathematical error a student will make solving this problem?
8. What is the law that allows you to solve this problem? Give the first lines of the solution, before you plug numbers in.
9. I hold two charges, both positive, a small distance apart. Do they repel each other?
10. The common answer for question 8b is “It will repel”. This is not a satisfactory answer. Why not, and what is the more complete answer?
11. The answer for test question 8 a) is 730 000V. What does this mean? (Hint: a Volt is a J/C).
12. Test question 8c is directly tied to 8a. Using words and formulae, explain how you answer test question 8c using your answer to 8a.